Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	8170M	Platinum	XCC	2.1	36	10.4	2666	26	Turbo	165W
Intel Xeon Processor Scalable Family	8170	Platinum	XCC	2.1	36	10.4	2666	26	Turbo	165W
Intel Xeon Processor Scalable Family	8168	Platinum	XCC	2.7	33	10.4	2666	24	Turbo	205W
Intel Xeon Processor Scalable Family	8164	Platinum	XCC	2.7	33	10.4	2666	26	Turbo	205W
Intel Xeon Processor Scalable Family	8160M	Platinum	XCC	2.1	33	10.4	2666	24	Turbo	150W
Intel Xeon Processor Scalable Family	8160	Platinum	XCC	2.1	33	10.4	2666	24	Turbo	150W
Intel Xeon Processor Scalable Family	8158	Platinum	XCC	3	24.75	10.4	2666	12	Turbo	150W
Intel Xeon Processor Scalable Family	8156	Platinum	XCC	3.6	16.5	10.4	2666	4	Turbo	105W
Intel Xeon Processor Scalable Family	8153	Platinum	XCC	2.0	22	10.4	2666	16	Turbo	125W
Intel Xeon Processor Scalable Family	6154	Gold	XCC	3.0	25	10.4	2666	18	Turbo	200W
Intel Xeon Processor Scalable Family	6152	Gold	XCC	2.1	25	10.4	2666	22	Turbo	140W

INSTANT SERVICES CO.,LTD

27

Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	6150	Gold	XCC	2.7	25	10.4	2666	18	Turbo	165W
Intel Xeon Processor Scalable Family	6148	Gold	XCC	2.4	27	10.4	2666	20	Turbo	150W
Intel Xeon Processor Scalable Family	6146	Gold	XCC	3.2	24.75	10.4	2666	12	Turbo	165W
Intel Xeon Processor Scalable Family	6144	Gold	XCC	3.5	24.75	10.4	2666	8	Turbo	150W
Intel Xeon Processor Scalable Family	6142M	Gold	XCC	2.6	22	10.4	2666	16	Turbo	150W
Intel Xeon Processor Scalable Family	6142	Gold	XCC	2.6	22	10.4	2666	16	Turbo	150W
Intel Xeon Processor Scalable Family	6140M	Gold	XCC	2.3	25	10.4	2666	18	Turbo	140W
Intel Xeon Processor Scalable Family	6140	Gold	XCC	2.3	25	10.4	2666	18	Turbo	140W
Intel Xeon Processor Scalable Family	6138	Gold	XCC	2	27.5	10.4	2666	20	Turbo	125W
Intel Xeon Processor Scalable Family	6136	Gold	XCC	3.0	24.75	10.4	2666	12	Turbo	125W
Intel Xeon Processor Scalable Family	6134M	Gold	XCC	3.2	24.75	10.4	2666	8	Turbo	130W

INSTANT SERVICES CO.,LTD.
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

DELL

Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	6134	Gold	XCC	3.3	24.75	10.4	2666	8	Turbo	130W
Intel Xeon Processor Scalable Family	6132	Gold	XCC	2.6	19.25	10.4	2666	14	Turbo	140W
Intel Xeon Processor Scalable Family	6130	Gold	XCC	2.1	22	10.4	2666	16	Turbo	125W
Intel Xeon Processor Scalable Family	6128	Gold	XCC	3.4	19.25	10.4	2666	6	Turbo	115W
Intel Xeon Processor Scalable Family	6126	Gold	XCC	2.6	19.25	10.4	2666	12	Turbo	125W
Intel Xeon Processor Scalable Family	5122	Gold	XCC	3.6	16.5	10.4	2400	4	Turbo	105W
Intel Xeon Processor Scalable Family	5120	Gold	HCC	2.2	19.25	10.4	2400	14	Turbo	105W
Intel Xeon Processor Scalable Family	5118	Gold	HCC	2.3	16.5	10.4	2400	12	Turbo	105W
Intel Xeon Processor Scalable Family	5115	Gold	HCC	2.4	13.75	10.4	2400	10	Turbo	85W
Intel Xeon Processor Scalable Family	4116	Silver	HCC	2.1	16	9.6	2400	12	Turbo	85W
Intel Xeon Processor Scalable Family	4114	Silver	LCC	2.2	14	9.6	2400	10	Turbo	85W

29

Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	4112	Silver	LCC	2.6	8.25	9.6	2400	4	Turbo	85W
Intel Xeon Processor Scalable Family	4110	Silver	LCC	2.1	11	9.6	2400	8	Turbo	85W
Intel Xeon Processor Scalable Family	4108	Silver	LCC	1.8	11	9.6	2400	8	Turbo	85W
Intel Xeon Processor Scalable Family	3106	Bronze	LCC	1.7	11	9.6	2133	8	No Turbo	85W
Intel Xeon Processor Scalable Family	3104	Bronze	LCC	1.7	11	9.6	2133	6	No Turbo	85W

Extended Reliability(T) SKUs

Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	8160T	Platinum	XCC	2.1	33	10.4	2666	24	Turbo	150W
Intel Xeon Processor Scalable Family	6138T	Gold	XCC	2	27.5	10.4	2666	20	Turbo	125W
Intel Xeon Processor Scalable Family	6130T	Gold	XCC	2.1	22	10.4	2666	16	Turbo	125W
Intel Xeon Processor Scalable Family	6126T	Gold	XCC	2.6	19.25	10.4	2666	12	Turbo	125W
Intel Xeon Processor Scalable Family	5120T	Gold	HCC	2.2	19.25	10.4	2400	14	Turbo	105W
Intel Xeon Processor Scalable Family	5119T	Gold	HCC	2.2	19.25	10.4	2400	14	Turbo	85W

Model	Intel SKU	SKU type	Stepping	Speed(GHz)	Cache(MB)	QPI(GT/s)	Max Memory Speed(MT/s)	Cores	Turbo	TDP
Intel Xeon Processor Scalable Family	4116T	Silver	HCC	2.2	16.5	9.6	2400	12	Turbo	85W
Intel Xeon Processor Scalable Family	4114T	Silver	LCC	2.2	13.75	9.6	2400	10	Turbo	85W
Intel Xeon Processor Scalable Family	4109T	Silver	LCC	2	24.75	9.6	2400	8	Turbo	70W

NOTE: CPU SKUs with SKU numbers ending with M can support up to 1.5TB of memory per socket

Processor Configurations

The R740 and R740xd supports up to two processors with up to 28 cores per processor.

Single CPU Configuration

The R740 and R740xd will function normally if there is just a single processor placed in the CPU1 socket . However, CPU and memory blanks associated with CPU2 are required to be populated for thermal reasons. The system will not boot if only CPU2 socket is populated. With Single CPU configuration, any Riser1 (1A/1B/1C/1D) card and only Riser 2B will be functional.

Chipset

The DELL EMC PowerEdge R740 and R740xd use the Intel C620 chipset (PCH) that provides extensive I/O support. Functions and capabilities include:

- ACPI Power Management Logic Support, Revision 4.0a
- PCI Express* Base Specification Revision 3.0
- Integrated Serial ATA host controller, supports data transfer rates of up to 6 Gb/s on all ports.
- xHCI USB controller with SuperSpeed USB 3.0 ports
- Direct Media Interface
- Serial Peripheral Interface
- Enhanced Serial Peripheral Interface
- Flexible I/O - Allows some high speed I/O signals to be configured as PCIe root ports, PCIe uplink for use with certain PCH SKUs, SATA (and sSATA), or USB 3.0.
- General Purpose Input Output (GPIO)
- Low Pin Count interface, interrupt controller, and timer functions
- System Management Bus Specification, Version 2.0
- Integrated Clock Controller / Real Time Clock Controller
- Intel High Definition Audio and Intel Smart Sound Technology
- Integrated 10/1 Gb Ethernet
- Integrated 10/100/1000 Mbps Ethernet MAC
- Supports Intel Rapid Storage Technology Enterprise

31

- Supports Intel Active Management Technology and Server Platform Services
- Supports Intel Virtualization Technology for Directed I/O
- Supports Intel Trusted Execution Technology
- JTAG Boundary Scan support
- Intel QuickAssist Technology
- Intel Trace Hub for debug

For more information, visit Intel.com

INSTANT SERVICES CO.,LTD.

5

System memory

The R740/R740xd supports DDR4 registered DIMMs (RDIMMs), load reduced DIMMs (LRDIMMs) and non-volatile dual in-line DIMM-Ns (NVDIMM-Ns). System memory holds the instructions that are executed by the processor.

> NOTE: MT/s indicates DIMM speed in MegaTransfers per second.

Memory bus operating frequency can be 2666 MT/s, 2400 MT/s, or 2133 MT/s depending on the following factors:

- DIMM type (RDIMM or LRDIMM)
- Number of DIMMs populated per channel
- System profile selected (for example, Performance Optimized, or Custom [can be run at high speed or lower])
- Maximum supported DIMM frequency of the processors

The R740/R740xd system contains 24 memory sockets split into two sets of 12 sockets, one set per processor. Each 12-socket set is organized into six channels. In each channel, the release tabs of the first socket are marked white, and the second socket black.
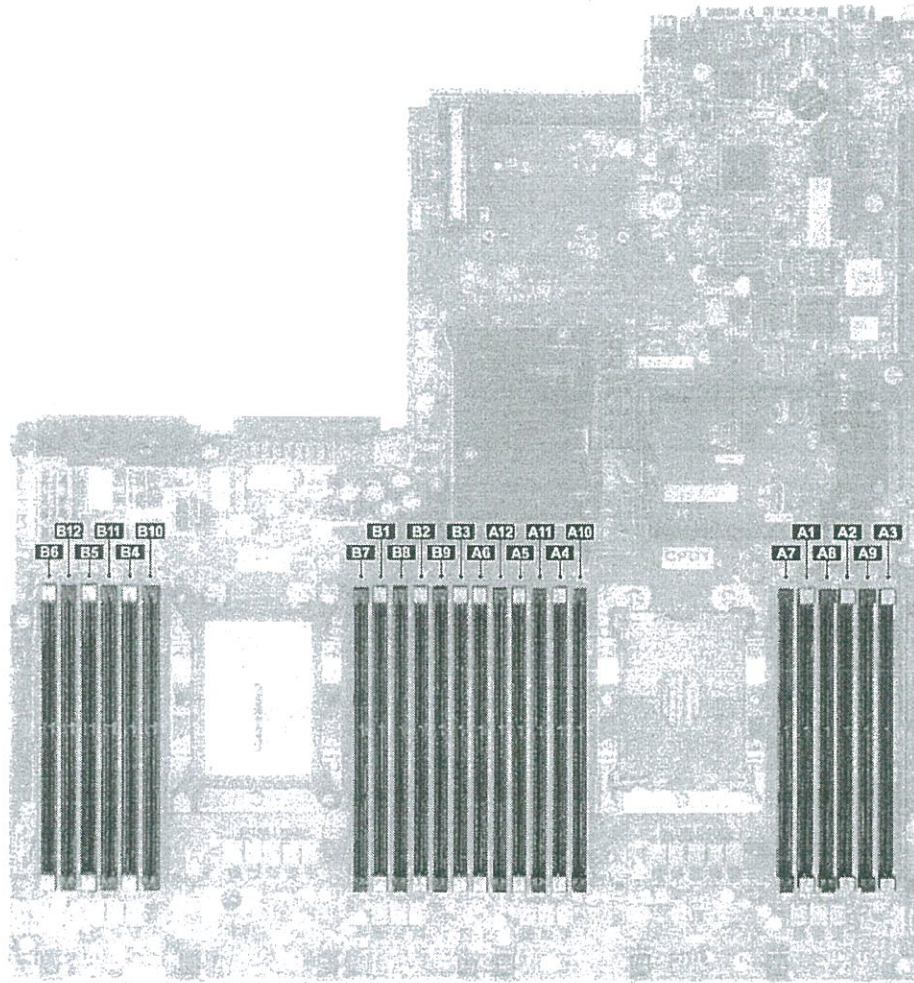
Figure 12. Memory socket locations

Memory channels are organized as follows:

Table 8. Memory channels

Proces sor	Channel 0	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
Proces sor 1	Slots A1 and A7	Slots A2 and A8	Slots A3 and A9	Slots A4 and A10	Slots A5 and A11	Slots A6 and A12
Proces sor 2	Slots B1 and B7	Slots B2 and B8	Slots B3 and B9	Slots B4 and B10	Slots B5 and B11	Slots B6 and B12

General memory module installation guidelines

📝 NOTE: Memory configurations that fail to observe these guidelines can prevent system from booting, stop responding during memory configuration, or operating with reduced memory.

The R740/R740xd system supports Flexible Memory Configuration, enabling the system to be configured and run in any valid chipset architectural configuration. The following are the recommended guidelines for installing memory modules:

- RDIMMs and LRDIMMs must not be mixed.
- x4 and x8 DRAM based memory modules can be mixed.
- Up to two RDIMMs can be populated per channel regardless of rank count.
- Up to two LRDIMMs can be populated per channel regardless of rank count.
- If memory modules with different speeds are installed, they will operate at the speed of the slowest installed memory module(s) or slower depending on the system DIMM configuration.
- Populate memory module sockets only if a processor is installed. For single-processor systems, sockets A1 to A12 are available. For dual-processor systems, sockets A1 to A12 and sockets B1 to B12 are available.
- Populate all the sockets with white release tabs first, followed by the black release tabs.
- When mixing memory modules with different capacities, populate the sockets with memory modules with highest capacity first. For example, if you want to mix 8 GB and 16 GB memory modules, populate 16 GB memory modules in the sockets with white release tabs and 8 GB memory modules in the sockets with black release tabs.
- In a dual-processor configuration, the memory configuration for each processor should be identical. For example, if you populate socket A1 for processor 1, then populate socket B1 for processor 2, and so on.
- Memory modules of different capacities can be mixed provided other memory population rules are followed (for example, 8 GB and 16 GB memory modules can be mixed).
- Mixing of more than two memory module capacities in a system is not supported.
- Populate six memory modules per processor (one DIMM per channel) at a time to maximize performance.

NVDIMM-N memory module installation guidelines

The following are the recommended guidelines for installing NVDIMM-N memory modules:

- Each system supports memory configurations with 1, 2, 4, 6, or 12 NVDIMM-Ns.
- Supported configurations have dual processors and a minimum of 12x RDIMMs.
- LRDIMMS and NVDIMM-Ns must not be mixed.
- Maximum of 12 NVDIMM-Ns can be installed in a system.

The following table lists the NVDIMM-N configurations that are currently supported on R740/R740xd.

Table 9. Supported NVDIMM-N configurations

Configuration	Description	Memory population rules
Configuration 1	12x 16 GB RDIMMs, 1x NVDIMM-N	RDIMMs – C1{1,2,3,4,5,6}, C2{1,2,3,4,5,6} NVDIMM-N – C1{7}
Configuration 2	12x 32 GB RDIMMs, 1x NVDIMM-N	RDIMMs – Same for all 12x RDIMM configurations. See Configuration 1 NVDIMM-N – C1{7},C2{7}
Configuration 3	23x 32 GB RDIMMs, 1x NVDIMM-N	RDIMMs – C1{1,2,3,4,5,6,7,8,9,10,11,12}, C2{1,2,3,4,5,6,7,8,9,10,11} NVDIMM-N – C2{12}

DELL

INSTANT SERVICES CO.,LTD
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

35

Configuration	Description	Memory population rules
Configuration 4	12x 16 GB RDIMMs, 2x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7}, C2{7}
Configuration 5	12x 32 GB RDIMMs, 2x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7}, C2{7}
Configuration 6	22x 32 GB RDIMMs, 2x NVDIMM-Ns	RDIMMs – C1{1,2,3,4,5,6,7,8,9,10,11}, C2{1,2,3,4,5,6,7,8,9,10,11} NVDIMM-N – C1{12}, C2{12}
Configuration 7	12x 16 GB RDIMMs, 4x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8}, C2{7,8}
Configuration 8	22x 32 GB RDIMMs, 4x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8}, C2{7,8}
Configuration 9	20x 32 GB RDIMMs, 4x NVDIMM-Ns	RDIMMs – C1{1,2,3,4,5,6,7,8,9,10}, C2{1,2,3,4,5,6,7,8,9,10} NVDIMM-N – C1{11,12}, C2{11,12}
Configuration 10	12x 16 GB RDIMMs, 6x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8,9}, C2{7,8,9}
Configuration 11	12x 32 GB RDIMMs, 6x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8,9}, C2{7,8,9}
Configuration 12	18x 32 GB RDIMMs, 6x NVDIMM-Ns	RDIMMs – C1{1,2,3,4,5,6,7,8,9}, C2{1,2,3,4,5,6,7,8,9} NVDIMM-N – C1{10,11,12}, C2{10,11,12}
Configuration 13	12x 16 GB RDIMMs, 12x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8,9,10,11,12}, C2{7,8,9,10,11,12}
Configuration 14	12x 32 GB RDIMMs, 12x NVDIMM-Ns	RDIMMs – Same for all 12x RDIMM configurations. See Config 1 NVDIMM-N – C1{7,8,9,10,11,12}, C2{7,8,9,10,11,12}

INSTANT SERVICES CO.,LTD.
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

6

Storage

The Dell EMC PowerEdge R740 and R740xd provide scalable storage that allows you to adapt to your workload and operational demands. With comprehensive storage options, the R740 and R740xd offer various internal and external storage controllers, drive types and different chassis and backplanes for varied numbers of drives. Features such as Express Flash PCIe SSDs, H740P and H840 RAID controller provide vastly accelerated performance over previous technologies. Dell EMC Express Flash drives use PCIe lanes to connect directly to the processor and chipset and are easily accessible through a hot-plug drive bay.

Storage Controllers

Dell EMC's RAID controller options offer performance improvements, including the Mini PERC solution. Mini PERC provides a base RAID hardware controller without consuming a PCIe slot by using a small form factor and high density connector to the base planar.

The new PERC controller offerings will leverage heavily on previous generation PERC family. The premium performance PERC series controller will drive better IOPs and enhanced the SSD performance.

Table 10. PERC Series Controller Offerings

Performance Level	Controller & Description
Entry	S140 (SATA, NVMe)
Value	HBA330 ,H330, 12Gbps SAS HBA
Value Performance	H730P
Premium Performance	H740P, H840

Supported Drives

Table 11. Supported Drives - SAS and SATA

Form Factor	Type	Speed	Rotational Speed	Capacities
2.5"	SATA, SSD	6 Gb	N/A	120GB Boot, 240GB Boot, 240GB, 400GB, 480GB, 800GB, 960GB, 1600GB, 1920GB, 3200GB, 3840GB
	SATA	6 Gb	7.2K	1TB, 2TB
	SAS	12 Gb	7.2K	1TB, 2TB, 2TB(SED FIPS)
	SAS,SSD	12 Gb	N/A	400GB, 480GB, 800GB, 960GB, 1600GB, 1920GB, 3840GB
	SAS	12 Gb	10K	300GB, 600GB, 1.2TB, 1.8TB, 2.4TB(P-RTS), 1.2TB(SED FIPS),

Form Factor	Type	Speed	Rotational Speed	Capacities
	SAS	12 Gb	15K	300GB, 600GB, 900GB, 900GB (SED FIPS)
3.5"	SATA	6 Gb	7.2K	1TB, 2TB, 4TB, 8TB, 10TB
	SAS	12 Gb	7.2K	1TB, 2TB, 4TB, 8TB, 10TB, 4TB (SED FIPS),8TB (SED FIPS)

Table 12. Supported Drives - NVMe SSD

Supported NVMe SSD
800GB 2.5" Device
1.6TB 2.5" Device
3.2TB 2.5" Device
6.4TB 2.5" Device
KIT,CRD,NVM,1.6,HHHL,PM1725
KIT,CRD,CTL,NVME,PM1725
KIT,CRD,NVM,3.2,HHHL,PM1725

IDSDM with vFlash card   Server 8

The Internal Dual SD Module (IDSDM) and vFlash card are combined into a single card module in the latest PowerEdge systems. The following are options available for PowerEdge R740 systems:

- vFlash only
- IDSDM only
- vFlash and IDSDM

> NOTE: The IDSDM only option is available with vFlash hardware and requires an iDRAC Enterprise license to enable the feature.

The IDSDM with vFlash module is installed in a Dell-proprietary PCIe x1 slot using a USB 3.0 interface as the host. In 14 Gen servers, the IDSDM and vFlash card features microSD in place of an SD card The supported capacities for the IDSDM microSD cards are 16/32/64 GB while for vFlash the capacity is limited to 16 GB only. The write-protect switch is built on the IDSDM with vFlash module.

Optical Drives

The PowerEdge R740 supports one of the following internal optical drive options:

- DVD-ROM
- DVD+ROM

The R740xd does not support an internal optical drive.

Tape Drives

The R740 and R740xd do not support internal tape drives. However, external tape backup devices will be supported on both R740 and R740xd.

INSTANT SERVICES CO.,LTD
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

DELLEMC

Supported external tape drives:

- External RD1000 USB
- External LTO-5, LTO-6, LTO-7 and 6 Gb SAS tape drives
- 114X rack mount chassis with LTO-5, LTO-6, and LTO-7 6Gb SAS tape drives
- TL1000 with LTO-5, LTO-6, and LTO-7 6 Gb SAS tape drives
- TL2000 with LTO-5, LTO-6, and LTO-7 6 Gb SAS tape drives
- TL4000 with LTO-5, LTO-6, and LTO-7 6 Gb SAS tape drives
- TL4000 with LTO-5, LTO-6, and LTO-7 8Gb FC tape drives
- ML6000 with LTO-5, LTO-6, 6 Gb SAS tape drives
- ML6000 with LTO-5, LTO-6, LTO-7 8Gb FC tape drives

Boot Optimized Storage Subsystem (BOSS)

The BOSS is offered as a means of booting R740/R740xd systems to a full OS mode when,

- target OS is a full OS and not hypervisor that may supported best by IDSDM
- the user does not wish to trade off standard hot plug drive slots for OS install

The Hardware RAID BOSS is a RAID controller with a limited feature set for the purpose of boot up to a full OS drive. The BOSS RAID controller presents M.2 SATA-only Solid State drives (SSD) as either Non-RAID disks or a single RAID1 volume configuration.
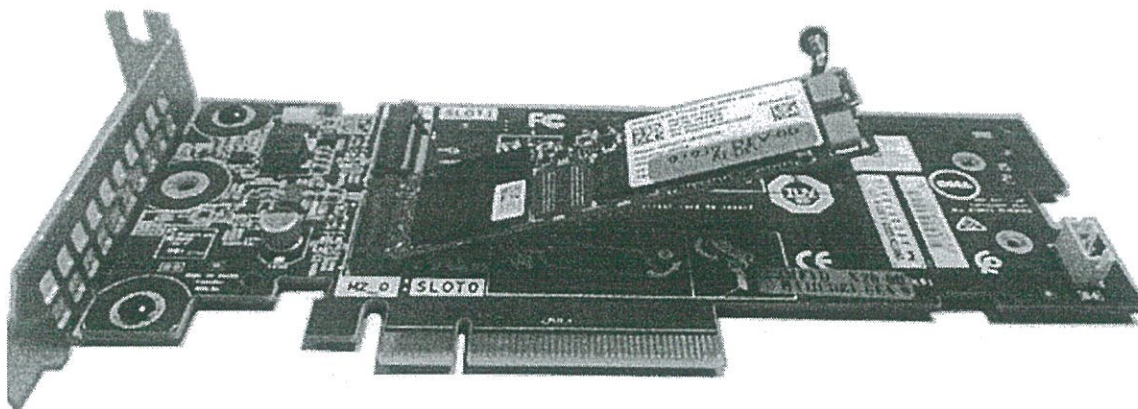
Figure 13. Boot Optimized Storage Subsystem (BOSS)

Table 13. BOSS RAID controller features

Function/Feature	Supported
Stripe size supported	64k
Configuration (HII)	Yes
Full initialization	No
Fast initialization	Yes
	NOTE: Performed on virtual disk creation by default.
Background initialization	No
RAID0	No
RAID1	Yes
Single non-RAID	Yes

Function/Feature	Supported
Dual non-RAID	Yes
Degraded RAID1 and non-RAID	No
Foreign import	Yes
Consistency check	No
Patrol read	No
Load balance	N/A
Rebuild	Yes

📝 NOTE: Manually triggered in Human Interface Infrastructure(HII) or via Marvell Command Line Interface (CLI).

Auto-rebuild	Yes

📝 NOTE: Auto Rebuild will occur at power up only if there is a surviving native virtual disk and another physical disk is present at power up.

Hot spare	No
Change rebuild priority/rate	No
Virtual disk write back/ read ahead cache	No

📝 NOTE: No controller cache.

Battery support	N/A

📝 NOTE: No battery.

Non-RAID disk cache policy	Yes

📝 NOTE: OS controlled/Device defaults.

SMART Info	Yes

📝 NOTE: Can be pulled by Marvell CLI.

Physical disk hot swap	No
Virtual disk expansion	No
Virtual disk slicing	No
Virtual disk migration	Yes

📝 NOTE: On new controller, virtual disk must be Imported from HII before presented to OS.

Split mirror	No

📝 NOTE: System required to shutdown and migrate one physical disk to another system and continue rebuild.

Non-RAID migration	Yes
BIOS configuration utility (Ctrl-M)	No
Add on driver for data path (OS device driver)	No

📝 NOTE: Console Windows driver or Linux library is required for management purposes only.

4K native drive support	No

INSTANT SERVICES CO.,LTD.
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

DELL

Function/Feature	Supported
TRIM and UNMAP virtual disk	No
TRIM and UNMAP Non-RAID physical disk	Yes
Self-encrypting drives(SED) support	No
Cryptographic erase (sanitize)	Yes

NOTE: If drive supports SANITIZE Crypto Erase. No other encryption support from controller or drive.

INSTANT SERVICES CO.,LTD
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

7

Networking and PCIe

The Dell EMC PowerEdge R740 and R740xd offers offer balanced, scalable I/O capabilities, including integrated PCIe 3.0-capable expansion slots. Dell Select Network Adapters, Dell's network daughter cards, enable you to choose the right network fabric without using up a valuable PCI slot. Pick the speed, technology, vendor, and other options, such as switch independent partitioning, which enable you to share and manage bandwidth on 10GbE connections.

Network card options

The DELL EMC PowerEdge R740 and R740xd system supports four Network Interface Controller (NIC) ports on the back panel, which are available in the following configurations:

- Four 1 Gbps
- Four 10 Gbps
- Two 10 Gbps and two 1 Gbps
- Two 25 Gbps

> NOTE: You can install up to eight PCIe add-on NIC cards.

PCIe Expansion cards

The PowerEdge R740 and R740xd system supports up to eight PCI express (PCIe) generation 3 expansion cards, that can be installed on the system board using PCIe expansion card risers.

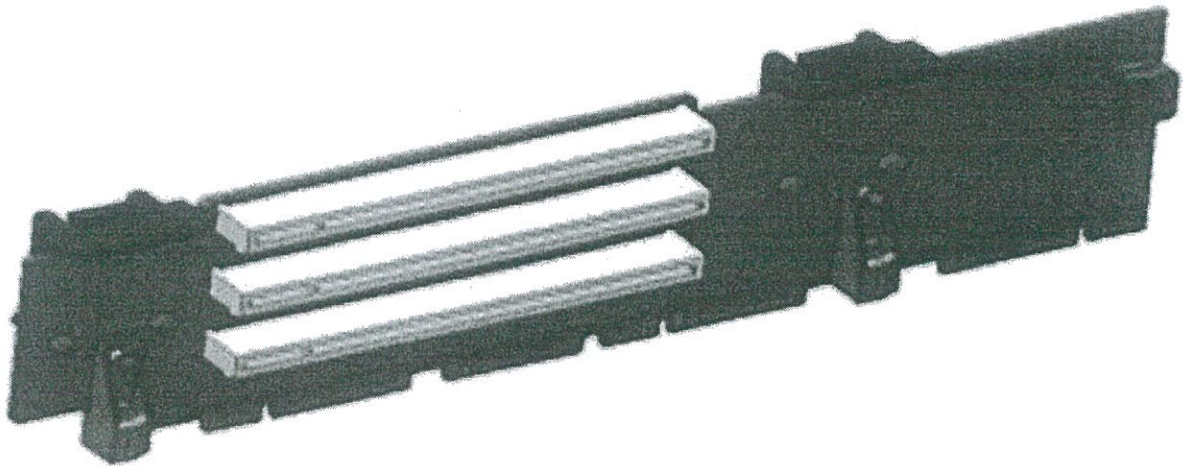Below are the risers offerings for both the R740 and R740xd.

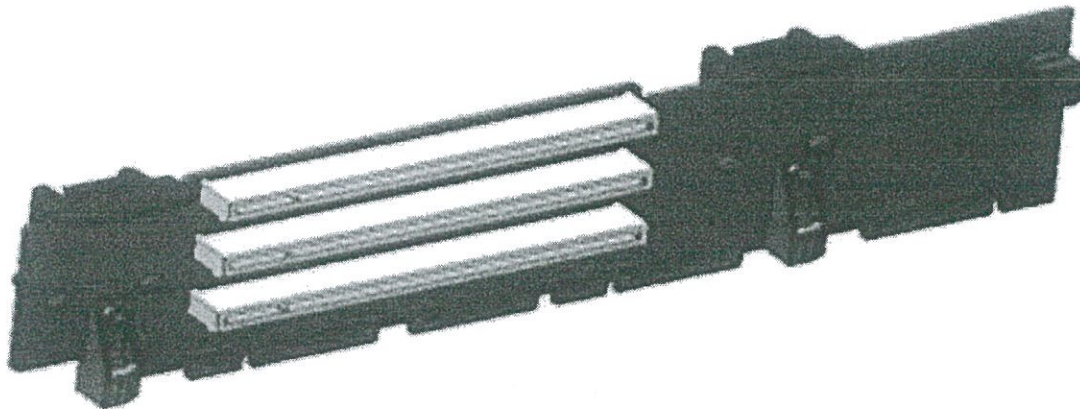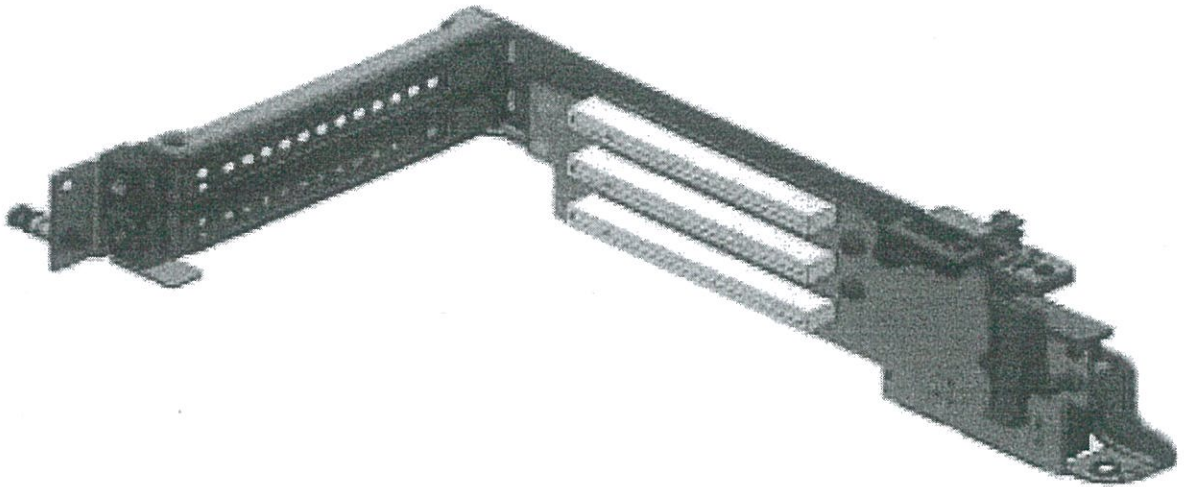### PCIe Expansion card riser

Riser 1A - 2 slots, 2x16(top and bottom)

DELL-EMC
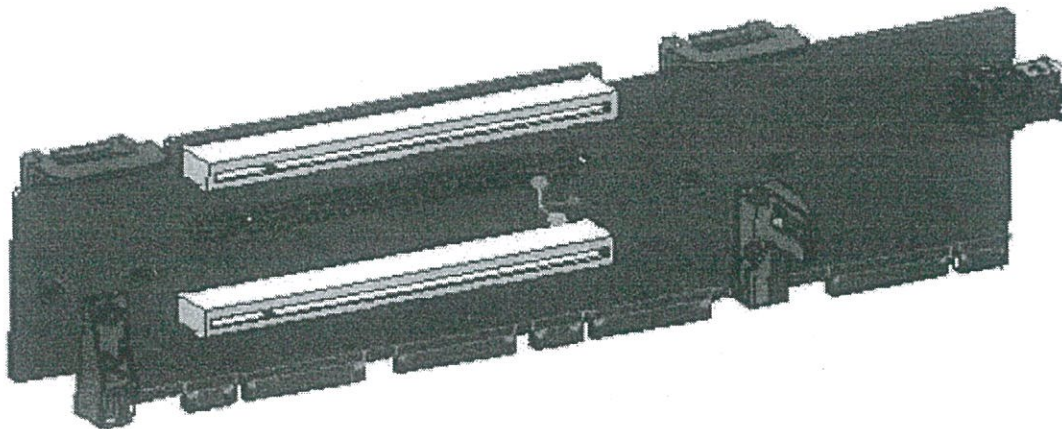
Riser 1B - 3 slots, 3x8 (top, middle and bottom)
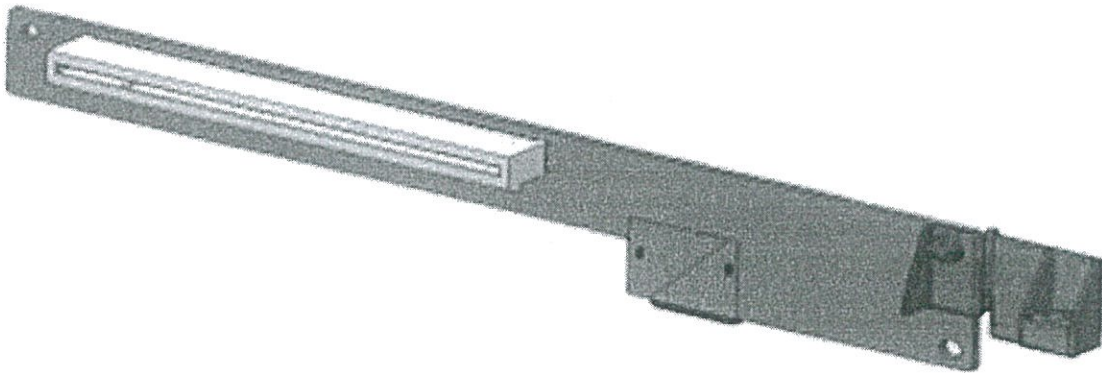

Riser 1D - 3slots, 3 slots, 1x16 (top) 2 x8 (middle and bottom)

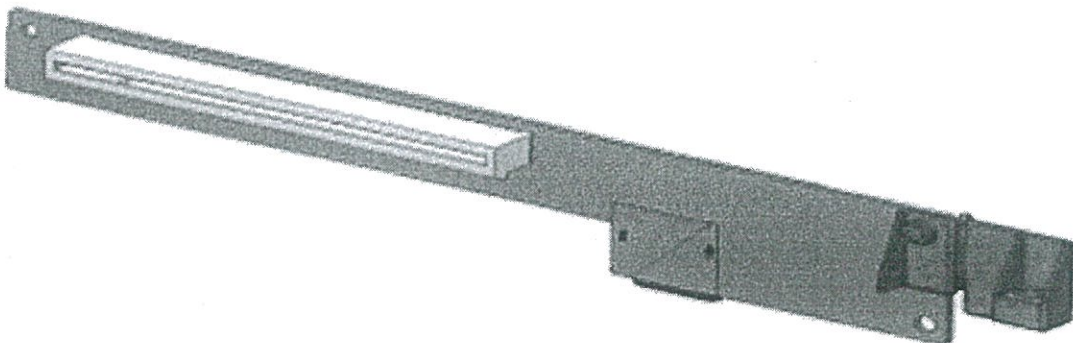Riser 2A - 2 slots, 3slots, 3 slots, 1x16 (top) 2 x8 (middle and bottom)

INSTANT SERVICES CO.,LTD.
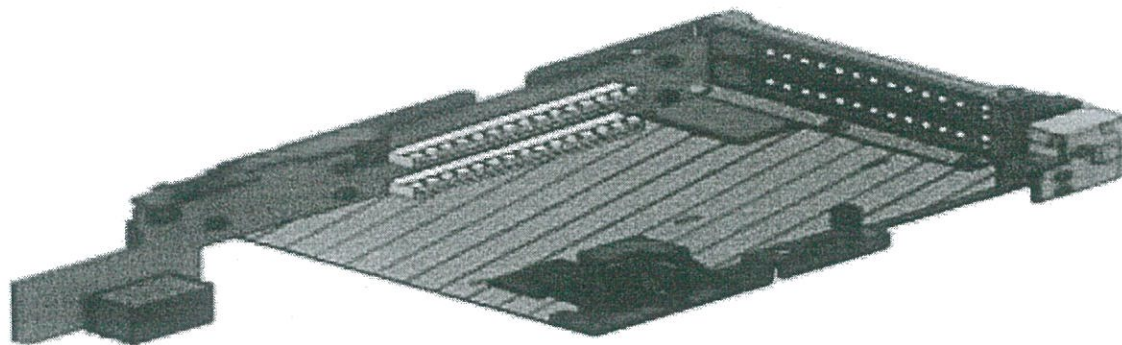บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

Riser 2B - 1slots, 1x8(Top and bottom)

Riser 2C - 1 slots, 1x16(Top and bottom)

Riser 3A - 2 slots, 1x8(Top), 1 x16 (bottom)

PCIe expansion card riser configurations

Table 14. PCIe Expansion card riser configurations for R740 and R740xd

Expansion card riser	PCIe slots on the riser	Height	Length	Link
Riser 1A	Slot 1	Full Height	Full Length	x16
	Slot 3	Full Height	Half Length	x16
Riser 1B	Slot 1	Full Height	Full Length	x8
	Slot 2	Full Height	Full Length	x8
	Slot 3	Full Height	Half Length	x8
Riser 1D	Slot 1	Full Height	Full Length	x16
	Slot 2	Full Height	Full Length	x8
	Slot 3	Full Height	Half Length	x8
Riser 2A	Slot 4	Full Height	Full Length	x16
	Slot 5	Full Height	Full Length	x8
	Slot 6	Low Profile	Half Length	x8
Riser 2B	Slot 4	Low Profile	Half Length	x8
Riser 2C	Slot 4	Low Profile	Half Length	x16
Riser 3A	Slot 7	Full Height	Full Length	x8
	Slot 8	Full Height	Full Length	x16

Table 15. PCIe riser configuration

Riser configuration	Numbers of CPUs	Supported PERC type	Possible rear storage
No riser	1 or 2	Mini-Mono	Yes
1B+2B	1 or 2	Mini-Mono/Adapter	Yes

45

Riser configuration	Numbers of CPUs	Supported PERC type	Possible rear storage
1B+2C	2	Mini-Mono/Adapter	Yes
1A+2A	2	Adapter	No
1A+2A+3A	2	Adapter	No
1B+2A+3A	2	Mini-Mono/Adapter	No
1D+2A+3A	2	Adapter	No

8

Power, Thermal, and Acoustics

The lower overall system-level power draw is a result of the breakthrough system design developed by Dell EMC. The system aims to maximize performance-per-watt through a combination of energy efficient technologies, optimized thermal designs and intelligent fan control algorithms. System fan control algorithms use an extensive array of sensors that automatically monitor power and thermal activity to minimize fan speeds based on system cooling requirements, reducing the power required for cooling.

Power consumption and energy efficiency

With the rise in the cost of energy coupled with increasing data center density, Dell EMC provides tools and technologies to help you realize greater performance with lower energy cost and wastage. More efficient data center usage can reduce costs by slowing the need for additional data center space. The following table lists the tools and technologies that Dell EMC offers to help you achieve your data center goals by lowering power consumption and increasing energy efficiency.

Table 16. Power tools and technologies

Feature	Description
Power supply units (PSU) portfolio	PSU portfolio includes intelligent features such as dynamically optimizing efficiency while maintaining availability and redundancy. For more information, see the *Power supply units* section.
Tools for right-sizing	Enterprise Infrastructure Planning Tool (EIPT) is a tool that helps you plan and tune your computer and infrastructure equipment for maximum efficiency by calculating hardware power consumption, power infrastructure and storage. Learn more at Dell.com/calc.
Power monitoring accuracy	PSU power monitoring improvements include: · Power monitoring accuracy of 1%, whereas the industry standard is 5% · More accurate reporting of power · Better performance under a power cap
Power capping	Use Dell EMC systems management tools such as OpenManage Power Center and iDRAC9 with an Enterprise license can be used to set a power limit for your server. This limits the output of a PSU and reduce system power consumption and help in constrained power situations.
Systems management Server 15.1	The integrated Dell Remote Access Controller 9 (iDRAC9) with Lifecycle Controller is embedded within every Dell EMC PowerEdge™ server and provides functionality that helps IT administrators deploy, update, monitor, and maintain servers with no need for any additional software to be installed. iDRAC functions regardless of operating system or hypervisor presence because from a pre-OS or bare-metal state, iDRAC is ready to work because it is embedded within each server from the factory.
Active power management	Dell EMC offers a complete power management solution accessed through the iDRAC9 with Enterprise licensing and OpenManage Power Center to implement policy-based management of power and thermal levels at the individual system, rack, or data center level. Hot spares reduce power consumption of redundant power supplies. Thermal control of fan speed optimizes the thermal settings for your environment to reduce fan consumption and lower system power consumption.

47

Power supply units

Energy Smart power supplies have intelligent features, such as the ability to dynamically optimize efficiency while maintaining availability and redundancy. Also featured are enhanced power-consumption reduction technologies, such as high-efficiency power conversion and advanced thermal-management techniques, and embedded power-management features including high-accuracy power monitoring.

The system supports two hot-swappable AC power supplies with 1 + 1 redundancy, auto-sensing and auto-switching capability.

Thermal and Acoustics

The system's thermal management delivers high performance through optimized cooling of components at the lowest fan speeds across a wide range of ambient temperatures from 10°C to 35°C (50°F to 95°F) and to extended ambient temperature ranges. These optimizations result in lower fan power consumption which translate to lower system power and data center power consumption.

Thermal design

The thermal design of the system reflects the following:

- **Optimized thermal design:** The system layout is architected for optimum thermal design. System component placement and layout are designed to provide maximum airflow coverage to critical components with minimal expense of fan power.
- **Comprehensive thermal management:** The thermal control system regulates the system fan speeds based on feedback from system component temperature sensors, as well as for system inventory and subsystem power draw. Temperature monitoring includes components such as processors, DIMMs, chipset, system inlet air temperature and hard disk drives.
- **Open and closed loop fan speed control:** Open loop fan control uses system configuration to determine fan speed based on system inlet air temperature. Closed loop thermal control uses temperature feedback to dynamically adjust fan speeds based on system activity and cooling requirements.
- **User-configurable settings:** With the understanding and realization that every customer has a unique set of circumstances or expectations from the system, in this generation of servers, we have introduced limited user-configurable settings in the iDRAC9 BIOS setup screen. For more information, see the Dell EMC PowerEdge system Installation and Service Manual on Dell.com/Support/Manuals and "Advanced Thermal Control: Optimizing across Environments and Power Goals" on Dell.com.
- **Cooling redundancy:** The system allows N+1 fan redundancy, allowing continuous operation with one fan failure in the system.

Acoustical design

Dell EMC focuses on sound quality in addition to sound power level and sound pressure level. Sound quality describes how disturbing or pleasing a sound is interpreted, and Dell EMC references a number of psychacoustical metrics and thresholds in delivering to it. Tone prominence is one such metric. Sound power and sound pressure levels increase with greater populations or higher utilization, while sound quality remains good even as the frequency content changes. A reference for comparison to sound pressure levels for familiar noise sources is given in the following table. An extensive description of Dell EMC Enterprise acoustical design and metrics is available in the Dell Enterprise Acoustics white paper.

Table 17. Acoustical reference points and output comparisons

Value measured at your ears		Equivalent familiar noise experience
LpA, dBA, re 20 µPa	Loudness, sones	
90	80	Loud concert
75	39	Data center, vacuum cleaner, voice must be elevated to be heard
60	10	Conversation levels
45	4	Whispering, open office layout, normal living room
35	2	Quiet office

30	1	Quiet library
20	0	Recording studio

9

Rack rails

The rail offerings for the PowerEdge R740 consist of two general types: sliding and static

Sliding rails features summary

The sliding rails (two varieties are offered) allow the system to be fully extended out of the rack for service. They are available with or without the optional cable management arm (CMA).
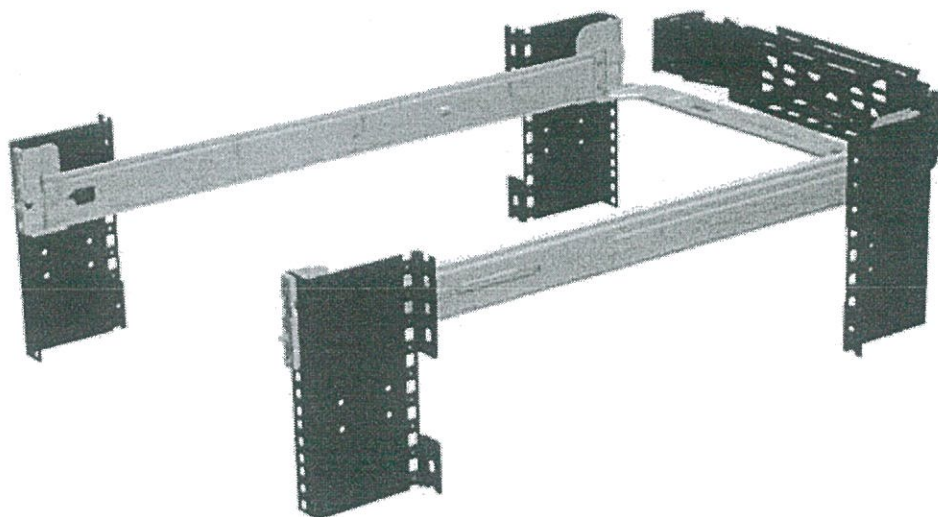

Figure 14. Sliding rails with optional CMA

ReadyRails-Sliding rails for 4-post racks

- Supports Drop-in Installation of the chassis to the rails.
- Support for tool-less installation in 19" EIA-310-E compliant square or unthreaded round hole 4-post racks including all generations of the Dell racks.
- Support for tooled installation in 19" EIA-310-E compliant threaded hole 4-post racks.
- Support full extension of the system out of the rack to allow serviceability of key internal components.
- Support for optional cable management arm (CMA).
- Minimum rail mounting depth without the CMA: 714 mm.
- Minimum rail mounting depth with the CMA: 845 mm.
- Square-hole rack adjustment range: 631-868 mm.
- Round-hole rack adjustment range: 617-861 mm.
- Threaded-hole rack adjustment range: 631-883 mm.

Stab-In/Drop-in sliding rails for 4-post racks (New for 14G systems)

- Supports drop-in or stab-in installation of the chassis to the rails.

- Support for tool-less installation in 19" EIA-310-E compliant square, unthreaded round hole racks including all generations of the Dell racks. Also supports tool-less installation in threaded round hole 4-post racks.
- Required for installing R740 in a Dell EMC Titan or Titan-D rack.
- Support full extension of the system out of the rack to allow serviceability of key internal components.
- Support for optional cable management arm (CMA).
- Minimum rail mounting depth without the CMA: 714 mm.
- Minimum rail mounting depth with the CMA: 845 mm.
- Square-hole rack adjustment range: 603-915 mm.
- Round-hole rack adjustment range: 603-915 mm.
- Threaded-hole rack adjustment range: 603-915 mm.

Static rails

The static rails support a wider variety of racks than the sliding rails. However, they do not support serviceability in the rack and are thus not compatible with the CMA.
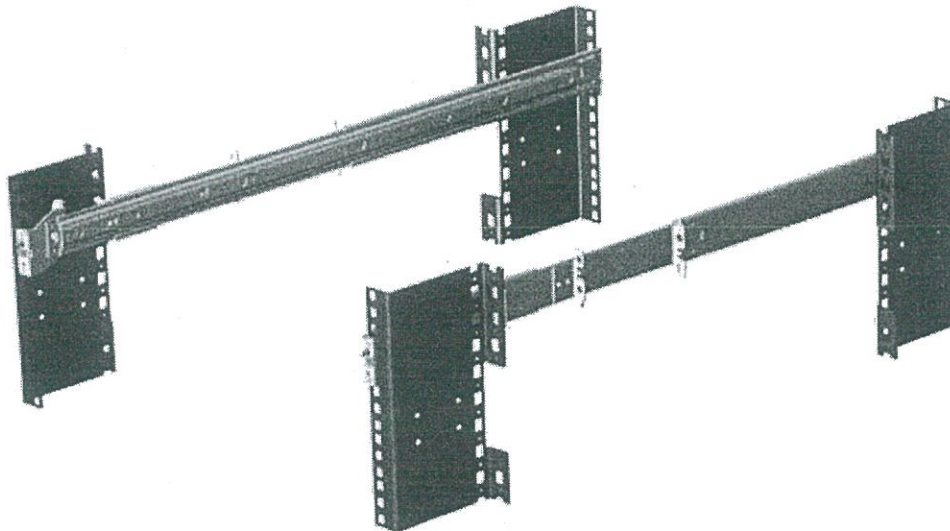

Figure 15. Static rails

Static rails features summary

Static Rails for 4-post & 2-post Racks:

- Supports Stab-in installation of the chassis to the rails.
- Support tool-less installation in 19" EIA-310-E compliant square or unthreaded round hole 4-post racks including all generations of Dell racks.
- Support tooled installation in 19" EIA-310-E compliant threaded hole 4-post and 2-post racks.
- Minimum rail mounting depth: 622 mm.
- Square-hole rack adjustment range: 608-879 mm.
- Round-hole rack adjustment range: 594-872 mm.
- Threaded-hole rack adjustment range: 608-890 mm.

NOTE: One key factor in selecting the proper rails is identifying the type of rack in which they are installed.

2-Post racks installation

DELL EMC

51

If installing to 2-Post (Telco) racks, the ReadyRails Static rails (B4) must be used. Both sliding rails support mounting in 4-post racks only.
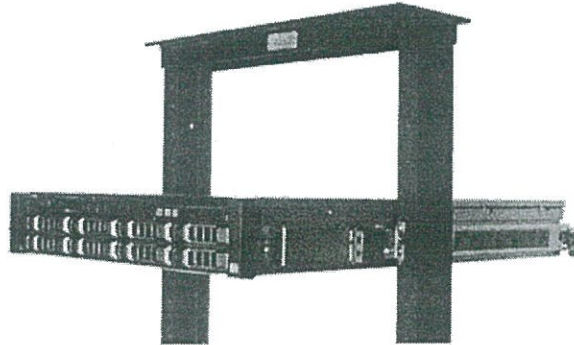

Figure 16. Static rails in 2-post center mount configuration

Installation in the Dell EMC Titan or Titan-D racks

If installing to Titan or Titan-D racks, the Stab-in/Drop-in Sliding rails (B13) must be used. This rail collapses down sufficiently to fit in racks with mounting flanges spaced about 24 inches apart from front to back. The Stab-in/Drop-in Sliding rail allows bezels of the servers and storage systems to be in alignment when installed in these racks.

System-to-Rail Installation Method

If the customer prefers to use the stab-in installation method for installing their systems to the rails, the Stab-in/Drop-in Sliding rails(B13) or the ReadyRails Static rail (B4) must be selected.

NOTE: ReadyRails Sliding rails (B6) are drop-in only.

Table 18. Static, Sliding, or Stab-in/Drop-in sliding rails

Rail identifier	Rail type	Installation method	Supported rack types					
			Dell EMC Titan or Titan-D Racks	4-Post			2-Post	
				Square	Round	Thread	Flush	Center
B6	Ready Rails Sliding	Drop-in	X	√	√	√ *	X	X
B13	Stab-in/ Drop-in Sliding	Stab-in/ Drop-in	√	√	√	√	X	X
B4	Ready Rails Static	Stab-in	X	√	√	√ *	√ *	√

* Minor conversion required

NOTE: No screws are required for the Stab-in/Drop-in Sliding (B13) rails when mounting the rails to the racks

NOTE: Screws are not included in either kit as threaded racks are offered with various thread designations. Users must therefore provide their own screws when mounting the rails in threaded racks.

NOTE: Screw head diameter for the sliding rails must be 10 mm or less.

Other key factors governing proper rail selection include the following:

· Spacing between the front and rear mounting flanges of the rack

- Type and location of any equipment mounted in the back of the rack such as power distribution units (PDUs)
- Overall depth of the rack

The static rails offer a greater adjustability range and a smaller overall mounting footprint than the sliding rails. This is because of their reduced complexity and lack of need for CMA support.

Table 19. Rail Adjustability Range and Rail Depth

Rail Identifier	Rail Type	Rail Adjustability Range (mm)*						Rail Depth (mm)+	
		Square		Round		Threaded		Without CMA	With CMA
		Min	Max	Min	Max	Min	Max		
B6	Ready Rails Sliding	676	868	662	861	676	883	714	845
B13	Stab-in/ Drop-in Sliding	603	915	603	915	603	915	714	845
B4	Ready Rails Static	608	879	594	872	604	890	622	N/A

* Values represent the distance between the front and rear mounting flanges on the rack

+ Measured from the front surface of the front rack mounting flange

✎ NOTE: For situations where CMA support is not required, the outer CMA mounting brackets can be removed from the sliding rails to reduce the overall length of the rails and eliminate potential interferences with rear-mounted PDUs or the rack rear door.

✎ NOTE: For the ReadyRails Sliding rails(B6) and ReadyRails Static rails (B4), the adjustment range of the rails is a function of the type of rack in which they are being mounted. The Min/Max values listed above represent the allowable distance between the front and rear mounting flanges in the rack. Rail depth without the CMA represents the minimum depth of the rail with the outer CMA brackets removed (if applicable) as measured from the front mounting flanges of the rack.

Cable management arm (CMA)

The optional cable management arm (CMA) organizes and secures the cords and cables exiting the back of the systems. It unfolds to allow the systems to extend out of the rack without having to detach the cables. Some key features of the CMA include:

- Large U-shaped baskets to support dense cable loads.
- Open vent pattern for optimal airflow.
- Ability to be mounted on either side by simply swinging the spring-loaded brackets from one side to the other.
- Utilizes hook-and-loop straps rather than plastic tie wraps to eliminate the risk of cable damage during cycling.
- Includes a low-profile fixed tray to both support and retain the CMA in its fully closed position.
- Both the CMA and the tray mount without the use of tools via simple and intuitive snap-in designs.

The CMA can be mounted to either side of the sliding rails without the use of tools or the need for conversion. However, it is recommended that it be mounted on the side opposite to the power supplies to allow easier access to the power supplies and rear hard drives (if applicable) for service or replacement.

INSTANT SERVICES CO.,LTD.
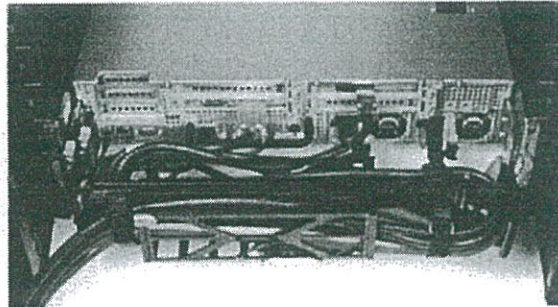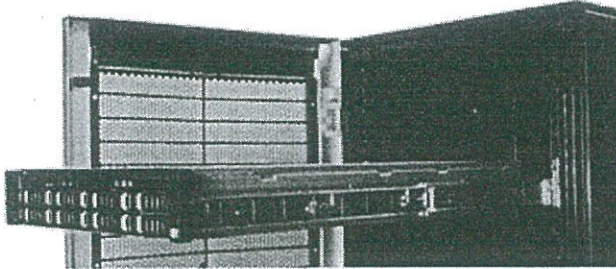บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

Figure 17. Sliding rails with CMA

Rack Installation

The R740 offers two different varieties of sliding rails: ReadyRail Sliding rails (B6), and combination Stab-in/Drop-in Sliding rails (B13). Only one variety of static rail is offered: ReadyRails Static rails (B4).

A "drop-in" design means that the system is installed vertically into the rails by inserting the standoffs on the sides of the system into the "J-slots" in the inner rail members with the rails in the fully extended position. The recommended method of installation is to first insert the rear standoffs on the system into the rear J-slots on the rails to free up a hand and then rotate the system down into the remaining J-slots while using the free hand to hold the rail against the side of the system.

A "stab-in" design means that the inner (chassis) rail members must first be attached to the sides of the system and then inserted into the outer (cabinet) members installed in the rack. For 2U systems, it is recommended that two people perform this operation.
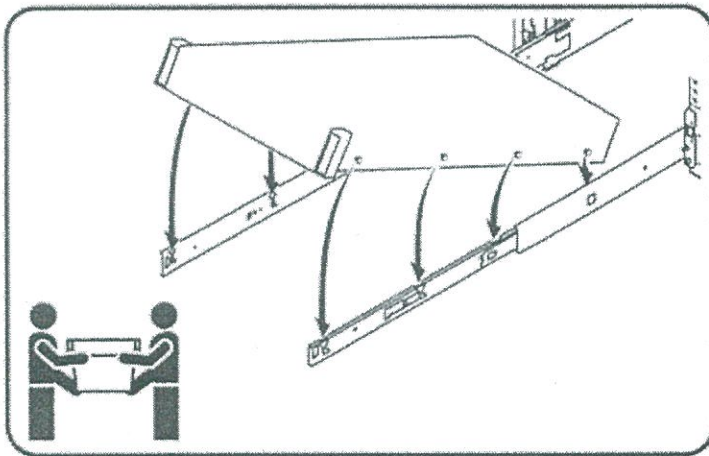
NOTE: The 2U system requires two people for installation due to its heavier weight.

Installing system into the rack (option A: Drop-In)

1. Pull the inner rails out of the rack until they lock into place.

Figure 18. Pull out inner rail

2. Locate the rear rail standoff on each side of the system and lower them into the rear J-slots on the slide assemblies.
3. Rotate the system downward until all the rail standoffs are seated in the J-slots.
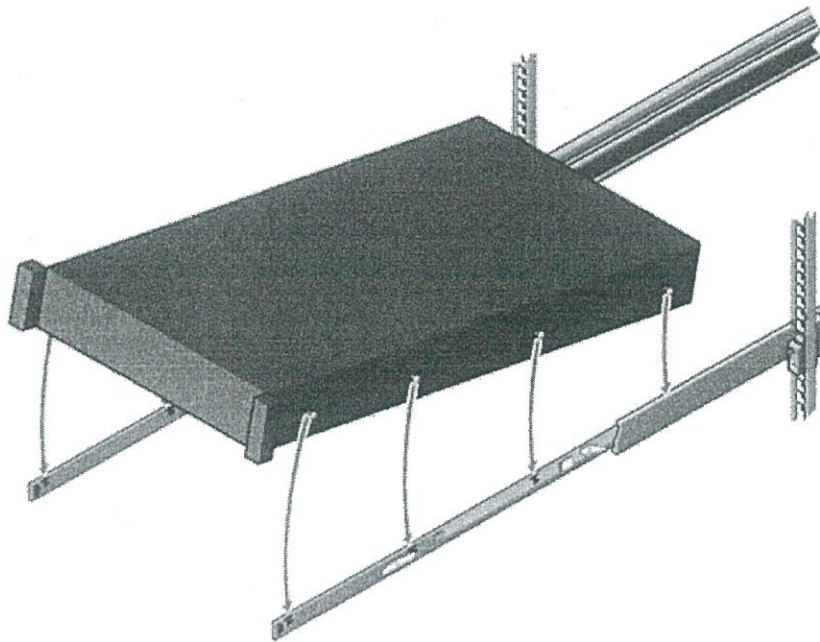
Figure 19. Rail standoffs seated in J-slots

55

4. Push the system inward until the lock levers click into place.
5. Pull the blue slide release lock tabs forward on both rails and slide the system into the rack until the system is in the rack.
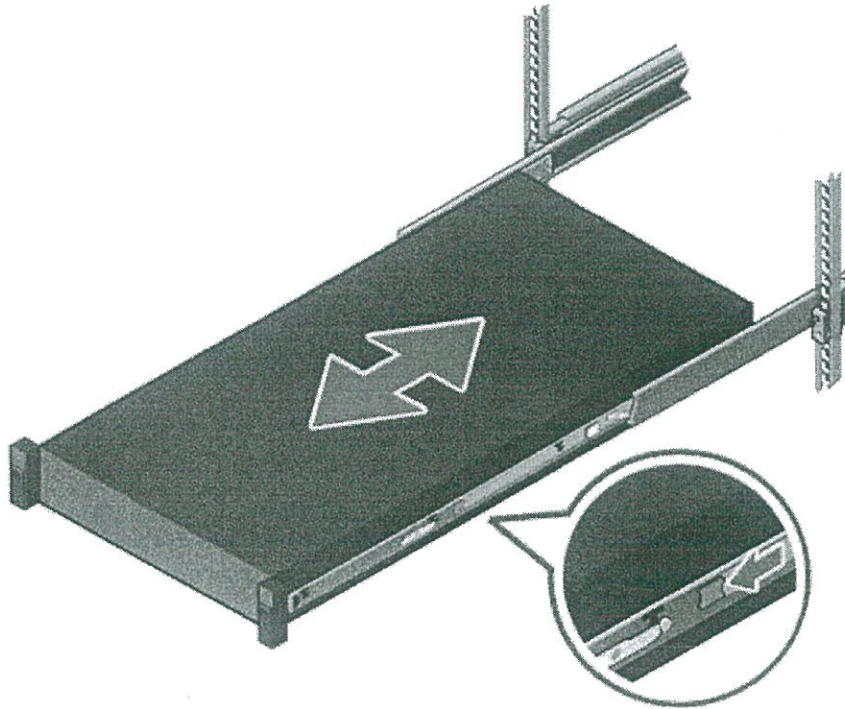
Figure 20. Slide system into the rack

Installing the system into the rack (option B: Stab-In)

1. Pull the intermediate rails out of the rack until they lock into place.
2. Release the inner rail lock by pulling forward on the white tabs and sliding the inner rail out of the intermediate rails.
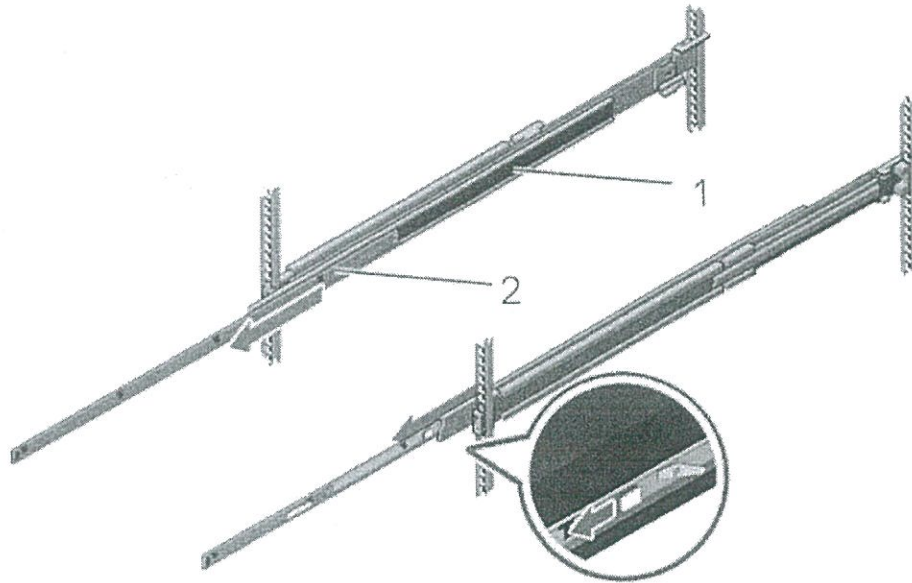
Figure 21. Pull out the intermediate rail

Table 20. Rail component

Number	Component
1	Intermediate rail
2	Inner rail

3. Attach the inner rails to the sides of the system by aligning the J-slots on the rail with the standoffs on the system and sliding forward on the system until they lock into place.

Figure 22. Attach the inner rails to the system

4. With the intermediate rails extended, install the system into the extended rails.
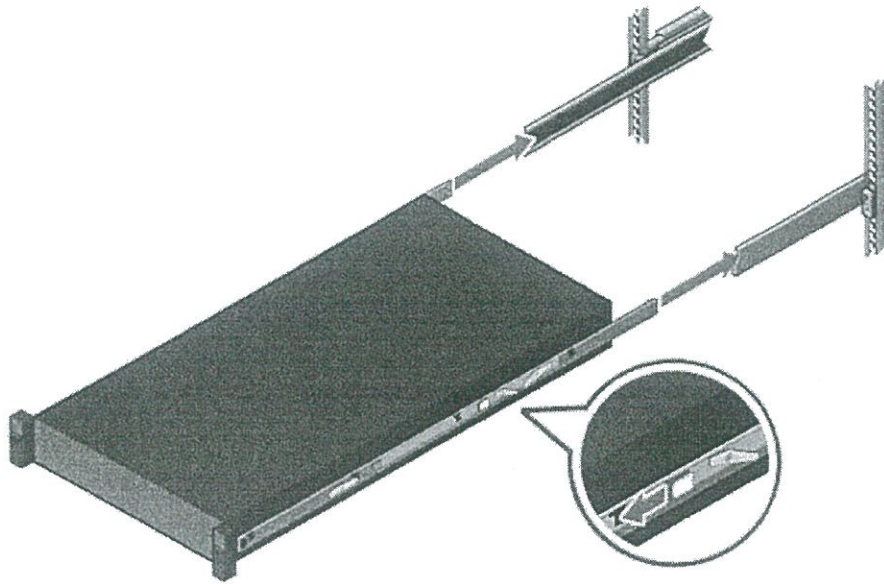
Figure 23. Install system into the extended rails

5. Pull the blue slide release lock tabs forward on both the rails, and slide the system into the rack.
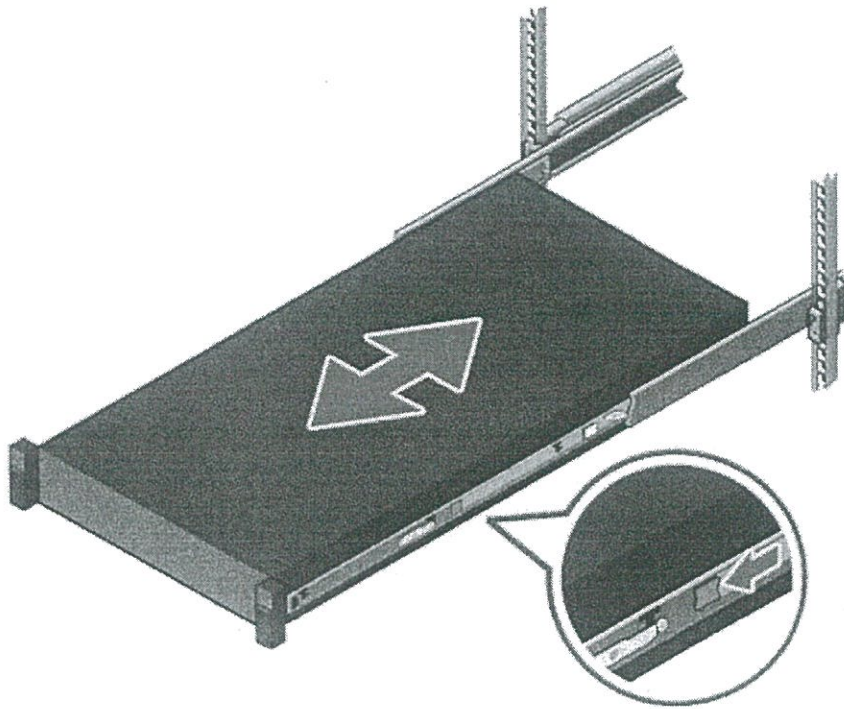
Figure 24. Slide system into the rack

Server 15.1

10

Dell EMC OpenManage systems management

Whether your IT environment consists of a few servers or a few thousand servers, Dell EMC OpenManage systems management solutions provide comprehensive management for evolving IT environments. OpenManage is based on open standards and provides agent-based and agent-free server lifecycle management functionality for Dell EMC PowerEdge servers. OpenManage solutions help you automate and streamline essential hardware management tasks.

Start with a firm foundation for efficient hardware management using OpenManage tools, utilities and management consoles. OpenManage systems management solutions consist of a combination of embedded management features and software products that help you automate and simplify the entire server lifecycle: deploy, update, monitor and maintain. OpenManage solutions are innovatively designed for simplicity and ease of use to help you reduce complexity, save time, achieve efficiency, control costs and empower productivity. OpenManage centers around efficient management of server lifecycle.
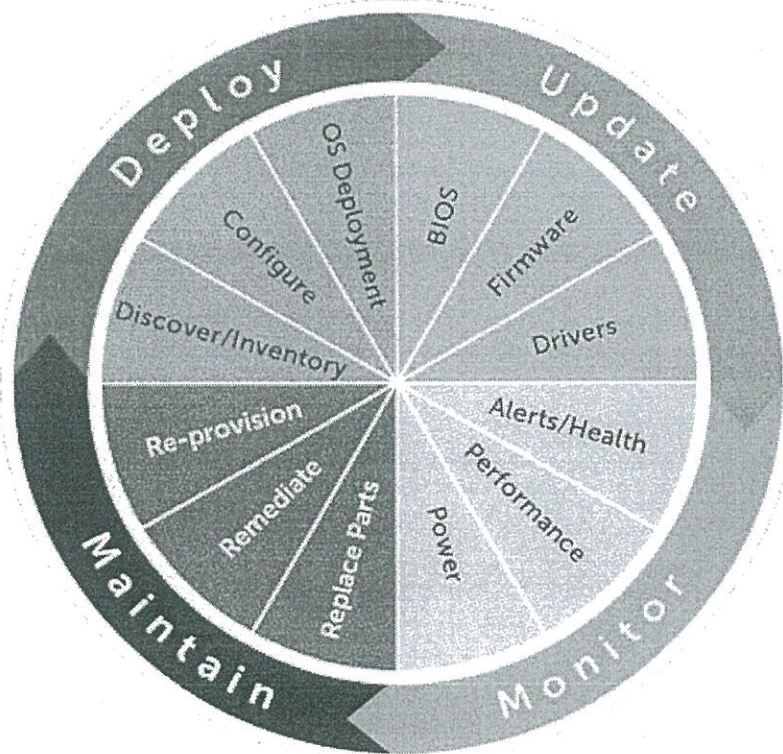
Figure 25. Server lifecycle management operations

OpenManage systems management

The Dell EMC OpenManage systems management portfolio includes powerful hardware and software management tools and consoles. OpenManage simplifies the lifecycle of deploying, updating, monitoring and maintaining your Dell EMC PowerEdge servers.

61

iDRAC with Lifecycle controller

The integrated Dell Remote Access Controller 9 (iDRAC9) with Lifecycle Controller is embedded within every Dell EMC PowerEdge server and provides functionality that helps IT administrators deploy, update, monitor, and maintain servers with no need for any additional software to be installed. iDRAC functions regardless of operating system or hypervisor presence because from a pre-OS or bare-metal state, iDRAC is ready to work because it is embedded within each server from the factory.

iDRAC features and comparison

The R740 supports the following iDRAC licenses – Basic (default), Express (upgrade) and Enterprise (upgrade).

📝 NOTE: The features listed in bold in the below table are new for iDRAC9.

Table 21. IDRAC feature comparison

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
Interface/Standards								
Redfish	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPMI 2.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DCMI 1.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web-based GUI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Racadm command line—local/remote	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SMASH-CLP—SSH-only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Telnet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SSH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serial redirection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WSMAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network Time Protocol	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Connectivity								
Shared NIC	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes
Dedicated NIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VLAN tagging	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPv4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPv6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DHCP (new default; no static IP)	Yes	**Yes**	Yes	**Yes**	Yes	**Yes**	Yes	**Yes**
DHCP with Zero Touch	No	No	No	No	No	No	No	**Yes**
Dynamic DNS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OS pass-through	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
iDRAC Direct-Front panel USB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connection View	No	Yes	No	Yes	No	Yes	No	Yes
NFS v4	No	Yes	No	Yes	No	Yes	No	Yes
NTLM v1 and NTLM v2	No	Yes	No	Yes	No	Yes	No	Yes
Security								
Role-based authority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Local users	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SSL encryption	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP blocking	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Directory services—AD, LDAP	No	No	No	No	No	No	Yes	Yes
Two-factor authentication	No	No	No	No	No	No	Yes	Yes
Single sign-on	No	No	No	No	No	No	Yes	Yes
PK authentication	No	No	Yes	Yes	Yes	Yes	Yes	Yes
FIPS 140-2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Secure UEFI boot-certificate management	No	Yes	No	Yes	No	Yes	No	Yes
Lock down mode	No		No	No	No	No	No	Yes
Unique iDRAC default password	No	Yes	No	Yes	No	Yes	No	Yes
Customizable Security Policy Banner-login page	No	Yes	No	Yes	No	Yes	No	Yes
Quick Sync 2.0-optional auth for read operations	No	Yes	No	Yes	No	Yes	No	Yes
Quick Sync 2.0-add mobile device number to LCL	No	Yes	No	Yes	No	Yes	No	Yes
Remote Presence								
Power control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Boot control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serial-over-LAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual Media	No	No	No	No	Yes	Yes	Yes	Yes
Virtual Folders	No	No	No	No	No	No	Yes	Yes
Remote File Share	No	No	No	No	No	No	Yes	Yes
Virtual Console	No	No	No	No	Yes	Yes	Yes	Yes
HTML5 access to virtual console	No	No	No	No	Yes	Yes	Yes	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
VNC connection to OS	No	No	No	No	No	No	Yes	Yes
Quality/bandwidth control	No	No	No	No	No	No	Yes	Yes
Virtual Console collaboration—6 users	No	No	No	No	No	No	Yes	Yes
Virtual Console chat	No	No	No	No	No	No	Yes	Yes
Virtual Flash partitions	No	No	No	No	No	No	Yes	Yes
Group manager	No	No	No	No	No	No	No	**Yes**
HTTP/HTTPS support along with NFS/CIFS	No	**Yes**	No	**Yes**	No	**Yes**	No	Yes
Power and Thermal								
Real-time power meter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power thresholds & alerts	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Real-time power graphing	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Historical power counters	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Power capping	No	No	No	No	No	No	Yes	Yes
Power Center integration	No	No	No	No	No	No	Yes	Yes
Temperature monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Temperature graphing	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Health Monitoring								
Predictive failure monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMPv1, v2 and v3—traps and gets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Email alerting	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Configurable thresholds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fan monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Supply monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Memory monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CPU monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RAID monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NIC monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HD monitoring—enclosure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Out of Band Performance Monitoring	No	No	No	No	No	No	Yes	Yes
Alerts for excessive SSD wear	No	**Yes**	No	**Yes**	No	**Yes**	No	**Yes**

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
Customizable settings for Exhaust Temperature	No	**Yes**	No	**Yes**	No	**Yes**	No	**Yes**
Update								
Remote agent-free update	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded update tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sync with repository—scheduled updates	No	No	No	No	No	No	Yes	Yes
Auto update	No	No	No	No	No	No	Yes	Yes
Improved PSU firmware updates	No	**Yes**	No	**Yes**	No	**Yes**	No	**Yes**
Deployment and Configuration								
Local configuration via F10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded OS deployment tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded configuration tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AutoDiscovery	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Remote OS deployment	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Embedded driver pack	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full configuration inventory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inventory export	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zerotouch configuration	No	No	No	No	No	No	Yes	Yes
System Retire/Repurpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Server Configuration Profile in GUI	No	**Yes**	No	**Yes**	No	**Yes**	No	**Yes**
Diagnostics, Service and Logging								
Embedded diagnostic tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Part Replacement	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Server Configuration Backup	No	No	No	No	No	No	Yes	Yes
Server Configuration Restore	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy Restore—system configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy Restore Auto Timeout	No	**Yes**	No	**Yes**	No	**Yes**	No	**Yes**

INSTANT SERVICES CO.,LTD
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

65

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
LED health status indicator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LCD screen—iDRAC9 requires optional bezel	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes
Quick Sync—require NFC bezel (13 G only)	Yes	No	Yes	No	N/A	No	Yes	No
Quick Sync 2.0—requires BLE/WiFi hardware	No	Yes	No	Yes	No	N/A	No	Yes
iDRAC Direct—front USB mgmt port	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
iDRAC Service Module (iSM) embedded	No	Yes	No	Yes	No	Yes	No	Yes
iSM to inband alert forwarding to consoles	No	Yes	No	Yes	No	Yes	No	Yes
Crash screen capture	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Crash video capture	No	No	No	No	No	No	Yes	Yes
Boot capture	No	No	No	No	No	No	Yes	Yes
Manual reset for iDRAC—LCD ID button	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote reset for iDRAC—requires iSM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual NMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OS watchdog	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SupportAssist Report—embedded	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
System Event Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lifecycle Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced logging in the Lifecycle controller log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Work notes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote Syslog	No	No	No	No	No	No	Yes	Yes
License management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improved customer experience								
iDRAC -Faster processor, more memory	No	Yes	No	Yes	No	Yes	No	Yes
GUI rendered in HTML5	No	Yes	No	Yes	No	Yes	No	Yes
Add BIOS configuration to iDRAC GUI	No	Yes	No	Yes	No	Yes	No	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
iDRAC support for SW RAID licensing	No	Yes	No	Yes	No	Yes	No	Yes

Agent-free management

As Dell EMC PowerEdge servers have embedded server lifecycle management, in many cases, there is no need to install an OpenManage systems management software agent into the operating system of a Dell EMC PowerEdge server. This greatly simplifies and streamlines the management footprint.

Agent-based management

Most systems management solutions require pieces of software, called agents, to be installed on each node in order to be managed within the IT environment. Additionally, the same agent is often used as a local interface into the hardware health and may be accessed remotely as a management interface, typically referred to as a one-to-one interface. For customers that continue to use agent-based solutions, Dell EMC provides OpenManage Server Administrator.

Dell EMC consoles

The central console in a systems management solution is often referred to as the one-to-many console. The central console provides a rapid view and insight into the overall health of all systems in the IT environment. The Dell EMC systems management portfolio includes several powerful consoles, depending upon your needs, including the following:

Dell EMC OpenManage Essentials

OpenManage Essentials is the one-to-many management console for monitoring Dell HW infrastructure including server, storage and networking, as well as for lifecycle management of PowerEdge servers. It support Windows, Linux, VMware, and HyperV environments. OME provides a simple and easy interface for system administrators to maximize the uptime and health of Dell systems. It helps to

- Monitor health status and events for PowerEdge servers, EqualLogic or MD series storage, and PowerConnect and Force 10 switches.
- Provide hardware-level control and management for PowerEdge server, blade system, and internal storage arrays.
- Link and Launch element management interfaces, such as, iDRAC, CMC, EQL group manager etc
- Integrate with the following Dell solutions:

  - Dell Repository Manager : Builds customized server update baselines that OpenManage Essentials can use.
  - OpenManage Power Center : Optimize power consumption in the servers.
  - SupportAssist : Enables automatic hardware failure notification to be sent securely to Dell technical support for intelligent analysis and diagnosis to optimize availability and reduce manual intervention. This solution is available as part of Dell ProSupport and ProSupport Plus at no additional cost.

- Provide REST interface API support for 3rd Party Integration.
- Manage Server Configuration - it is a fee-based license available on Dell's 14th generation of PowerEdge servers with iDRAC Enterprise or iDRAC Express licenses. The key features include the following:

  - Configure a server or chassis using a template and deploying an operating system on the PowerEdge bare metal servers.
  - During a server operation, automatically detect and notify any server or chassis drift from a customer-defined baseline configuration.
  - Boot a system from a network-mounted ISO using iDRAC.
  - Replicate of FN-IOM and M-IOA configurations within M1000e chassis.
  - Support VLAN Management for FN-IOM and M-IOA.

- For more information, see delltechcenter.com/OME

OpenManage Mobile

OpenManage Mobile(OMM) is a software application that enables easy, convenient, and secure monitoring and management of PowerEdge servers remotely, or at-the-server. With OpenManage Mobile, IT Administrators can securely perform several data center monitoring and remediation tasks using an Android or iOS mobile device. The OpenManage Mobile app is available as a free software download from the Apple Store and the Google Play Store.

OMM can also monitor and manage PowerEdge servers through a OpenManage Essentials console or by directly accessing the server's iDRAC.

The OpenManage Essentials console can be accessed through OpenManage Mobile over a secure IP network. This allows you to monitor all devices managed by OpenManage Essentials such as Dell EMC servers, storage, networking, firewall, and supported third party devices.

If you are remote, you can access iDRAC over a secure IP network. If you are at-the-server, an iDRAC can be accessed directly by tapping an NFC-enabled android mobile device on a PowerEdge "Quick Sync" bezel to perform several basic bare-metal configuration tasks such as assigning an IP address, and changing server credentials or the boot order.

Key Features of OpenManage Mobile (When connected through OpenManage Essentials console):

- Connect to multiple servers which have OME installed, from a single mobile device.
- Connect to multiple servers individually through the iDRAC interface.
- Receive critical alert notification on your mobile device as they arrive into your OpenManage Essentials management console.
- Acknowledge, forward, and delete alerts from your mobile device.
- Browse through device details, firmware inventory, and event logs of individual systems.
- Perform several server management functions such as power-on, power cycle, reboot, and shutdown from the mobile application.

Key Features of OpenManage Mobile (When connected through iDRAC):

- Connect to any 14th gen, 13th gen, or 12th gen server remotely
- Access 14th gen rack or tower server through Quick Sync 2 module.
- Access R730, R730XD, or R630 through Quick Sync bezel
- Assign IP address, change credentials, and update common BIOS attributes for Bare Metal Configuration
- Configure one server manually, or multiple servers simultaneously through a template.
- Browse server details, health status, hardware & firmware inventory, networking details, and System Event or LC logs. Share this information easily with other IT Administrators.
- Access SupportAssist reports, Last Crash screen and video (PowerEdge 14th gen servers)
- Access Virtual Console (and reduce the need for crash carts).
- Power On, Shut down, or Reboot your server from anywhere.
- Run any RACADM command

OpenManage Power Center

OpenManage Power Center is a one-to-many application that can read power usage and thermal readings information from Dell EMC servers, Power Distribution Units (PDU), and Uninterruptible Power Supplies (UPS). It can aggregate this information into rack, row, and room-level views. On servers with iDRAC Enterprise license, you can also cap or throttle the power consumption. You may need to set power caps to reduce the power consumption due to external events such as brownouts or failures of data-center cooling devices. You can also use power capping to safely increase the numbers of servers in a rack to match the power that is provisioned for that rack.

For more information, see OpenManage Power Center User's Guide available at **Dell.com/openmanagemanuals**.

Dell EMC OpenManage systems management tools, utilities and protocols

Dell EMC OpenManage systems management tools and utilities consist of the following:

Dell EMC Repository Manager:

Dell EMC Repository Manager (DRM) is an application that helps you to:

- Identify the updates that are relevant to the systems in your data center.
- Identify and notify when updates are available.
- Package the updates into different deployment format.

To automate the creation of baseline repositories, DRM provides advanced integration capabilities with iDRAC/LC, OpenManage Essentials, Chassis Management Controller, OpenManage Integration for VMware vCenter and OpenManage Integration for Microsoft System Center (OMIMSSC). Also, DRM packages updates into custom catalogs that can be used for deployment.

Dell EMC Repository Manager can create the following deployment tools:

- Custom catalogs
- Lightweight deployment pack
- Bootable Linux ISO
- Custom Server Update Utility (SUU)

For more information, see Dell EMC Repository Manager User's Guide available at **Dell.com/support/manuals**.

Dell Update Packages

Dell Update Packages (DUP) is a self-contained executable supported by Microsoft Windows or Linux that updates a component on a server and applications like OMSA, iSM, and DSET.

DUPs can be executed in GUI or in CLI mode.

For more information, see Dell EMC Update Packages User's Guide available at www.delltechcenter.com/DSU.

Dell Remote Access Controller Administration (RACADM) CLI

The RACADM command-line utility provides a scriptable interface to perform inventory, configuration, update, and health status check of PowerEdge servers. RACADM operates in multiple modes:·

- Local — supports running RACADM commands from the managed server's operating system.
- SSH or Telnet — known as Firmware RACADM; is accessible by logging in to iDRAC using SSH or Telnet
- Remote — supports running RACADM commands from a remote management station such as a laptop or desktop.

RACADM is supported by the iDRAC with Lifecycle Controller and by the Chassis Management Controller of the M1000e, VRTX and FX2 modular systems. Local and Remote RACADM is supported on Windows Server, Windows clients, and on Red Hat, SuSe and Ubuntu Linux.

For more information, see the RACADM Command Line Reference Guide for iDRAC and CMC available at **Dell.com/support/manuals**.

iDRAC with Lifecycle Controller Embedded Management APIs

iDRAC with Lifecycle Controller provides a range of standards-based applications programming interfaces (APIs) that enable scalable and automated management of PowerEdge servers. Standard systems management APIs have been developed by organizations such as the Institute of Electrical and Electronics Engineers (IEEE) and Distributed Management Task Force (DMTF). These APIs are

widely used by commercial systems management products and by custom programs and scripts developed by IT staff to automate management functions such as discovery, inventory, health status checking, configuration, update, and power management. The APIs supported by iDRAC with Lifecycle Controller include:

- **Redfish** - In 2015, the DMTF Scalable Platforms Management Forum published Redfish, an open industry-standard specification and schema designed to meet the needs of IT administrators for simple, modern, and secure management of scalable platform hardware. Dell is a key contributor to the Redfish standard, acting as co-chair of the SPMF, promoting the benefits of Redfish, and working to deliver those benefits within industry-leading systems management solutions. Redfish is a next generation management standard using a data model representation inside a hypermedia RESTful interface. The data model is defined in terms of a standard, machine-readable schema, with the payload of the messages expressed in JSON and the OData v4 protocol.
- **WSMan** -The Web Services For Management (WSMan) API, first published by the DMTF in 2008, is the most mature and robust API provided by iDRAC with Lifecycle Controller. WSMan uses a Simple Object Access Protocol (SOAP) with data modeled using the Common Information Model. WSMan provides interoperability between management applications and managed resources, and identifies a core set of web service specifications and usage requirements that expose a common set of operations central to all systems management.
- **IPMI** - The Intelligent Platform Management Interface (IPMI) is a message-based, hardware-level interface specification that can operate over both LAN and serial interfaces. IPMI is supported broadly by server vendors, systems management solutions, and open source software.
- **SNMP** - The Simple Network Management Protocol (SNMP) helps in standardizing the management of network devices. SNMP allows commercial management consoles created for monitoring network switches and routers to also monitor X86 severs. SNMP is primarily used to deliver event messages to alert administrators of problems on their systems but can also be used to discover, inventory and configure servers.

To assist automating system management tasks and simplify API integration, Dell provides PowerShell and Python libraries and script examples utilizing the WSMan interface. The iDRAC with LC pages of Dell Techcenter offer a library of technical white papers detailing the use of the embedded management APIs. For more information, see delltechcenter.com/iDRAC and delltechcenter.com/LC.

Integration with third-party consoles

Dell EMC OpenManage provides integration with several leading third-party consoles, including:

OpenManage Integration Suite for Microsoft System Center

The combination of Dell OpenManage Integration Suite and Microsoft System Center simplifies and enhances deployment, configuration, monitoring and updating of Dell servers and storage in physical and virtual environments. Our agent-free and agent-based plug-ins deliver a unique level of integration and efficiency when managing Dell hardware within a System Center environment.

The OpenManage Integration Suite for Microsoft System Center includes: Dell Server and Storage Management Packs for System Center Operations Manager (SCOM); Dell Server Deployment Packs and Update Catalogs for System Center Configuration Manager (SCCM); and tools for optimizing management of Dell PowerEdge servers in virtual environments using System Center Virtual Machine Manager (SCVMM).

OpenManage Integration for VMware vCenter

The OpenManage Integration for VMware vCenter allows you to monitor, provision, and manage PowerEdge server hardware and firmware. You can perform these tasks through a dedicated Dell menu that can be accessed directly through the VMware vCenter console. OMIVV also allows granular control and reporting for the hardware environment using the same role-based access control model as vCenter. The OpenManage Management Pack for vRealize Operations Manager is available with OMIVV v4.0 onwards. This helps in checking hardware health and alerting into vRealize operations, which also includes dashboard and reporting on the server environment.

You can manage and monitor Dell hardware within the virtualized environment

- Alerting and monitoring environment for servers and chassis
- Monitoring and reporting for servers and chassis
- Updating firmware on servers

· Deploying enhanced options

For more information, see delltechcenter.com/omivv

📝 **NOTE:** The Dell EMC Repository Manager integrates with OpenManage Integration for VMware vCenter. The Dell EMC Repository Manager provides advanced functionality, simplifies the discovery, and deployment of new updates.

BMC Software

Dell EMC and BMC Software work together to simplify IT by ensuring tight integration between Dell EMC server, storage, and network management functionality and the BMC Software process and data center automation products.

OpenManage connections with third-party consoles

Dell EMC OpenManage Connections gives you an easy path to adding support for third-party devices, so you can continue to use your existing management tools while easily adding Dell EMC server systems to your existing IT environment. Integrate new systems at your own pace. Manage new Dell EMC servers and storage with your legacy management tools, while extending the useful life of your existing resources. With OpenManage Connections you can add monitoring and troubleshooting of Dell EMC assets to your IT infrastructure.

· OpenManage Connection for Nagios Core and Nagios XI
· OpenManage Connection for HPE Operations Manager i (OMi)

For more information on these OpenManage Connections, visit **Dell.com/openmanage**.

Dell EMC server management operations

Dell EMC OpenManage systems management is centered on automating the server management lifecycle — deploy, update, monitor and maintain. To manage an infrastructure properly and efficiently, you must perform all of these functions easily and quickly. iDRAC9 with Lifecycle Controller technology provides you with these intelligent capabilities embedded within the server infrastructure. This allows you to invest more time and energy on business improvements and less on maintenance.
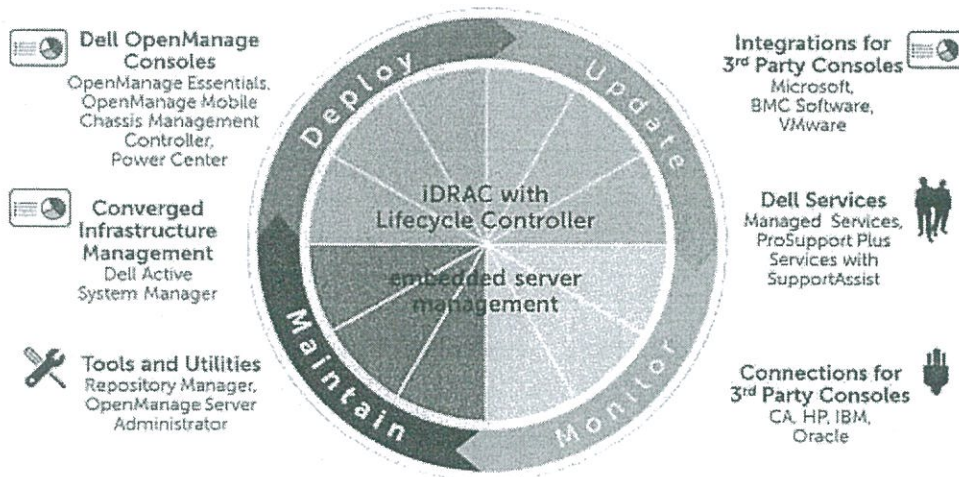

Figure 26. Systems management server lifecycle

Table 22. One-to-one and one-to-many operations

Operation	One-to-one	One-to-many
Deploy	· Lifecycle Controller GUI	· OpenManage Integration for VMware vCenter · OpenManage Integration for BMC BladeLogic

	· DTK	· OpenManage Integration for Microsoft System Center Configuration Manager
Update	· iDRAC9 with Lifecycle Controller · Repository Manager · DUP · SUU · OpenManage Integration for VMware vCenter	· Dell EMC OpenManage Essentials · OpenManage Integration for Microsoft System Center Configuration Manager
Monitor	· iDRAC9 with Lifecycle Controller · OMSA	· Dell EMC OpenManage Essentials · Dell EMC OpenManage Power Center · OpenManage Integration for VMware vCenter · OpenManage Integration for Microsoft System Center Operations Manager
Maintain	· iDRAC9 with Lifecycle Controller · IPMI	· Lifecycle Controller Remote Services Remediate and replace parts: · OpenManage Integration for Microsoft System Center Virtual Machine Manager (SCVMM) · Server Pro Management Pack and Lifecycle Controller Integration (DLCI)

For additional detailed information on Dell EMC systems management portfolio, visit Dell.com/OpenManage.

11

Appendix A. Additional specifications

PSU specifications

The PowerEdge R740 system supports up to two AC or DC power supply units (PSUs).

Table 23. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
495 W AC	Platinum	1908 BTU/hr	50/60 Hz	100–240 V AC, autoranging	6.5 A–3 A
750 W AC	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A–5 A
750 W AC	Titanium	2843 BTU/hr	50/60 Hz	200–240 V AC, autoranging	5 A
750 W Mixed Mode HVDC (for China only)	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A–5 A
	N/A	2891 BTU/hr	N/A	240 V DC, autoranging	4.5 A
1100 W AC	Platinum	4100 BTU/hr	50/60 Hz	100–240 V AC, autoranging	12 A–6.5 A
1100 W DC	N/A	4416 BTU/hr	N/A	–(48–60) V DC, autoranging	32 A
1100 W Mixed Mode HVDC (for China and Japan only)	Platinum	4100 BTU/hr	50/60 Hz	100–240 V AC, autoranging	12 A–6.5 A
	N/A	4100 BTU/hr	N/A	200–380 V DC, autoranging	6.4 A–3.2 A
1600 W AC	Platinum	6000 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A
2000 W AC	Platinum	7500 BTU/hr	50/60 Hz	100–240 V AC, autoranging	11.5 A
2400 W AC	Platinum	9000 BTU/hr	50/60 Hz	100–240 V AC, autoranging	16 A

✎ NOTE: Heat dissipation is calculated using the PSU wattage rating.

✎ NOTE: This system is also designed to connect to the IT power systems with a phase to phase voltage not exceeding 240 V.

✎ NOTE: If a system with 2400 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1400 W.

✎ NOTE: If a system with 2000 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1000 W.

✎ NOTE: If a system with 1600 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 800 W.

✎ NOTE: If system with 1100 W AC PSU or 1100 W Mixed Mode HVDC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1050 W.
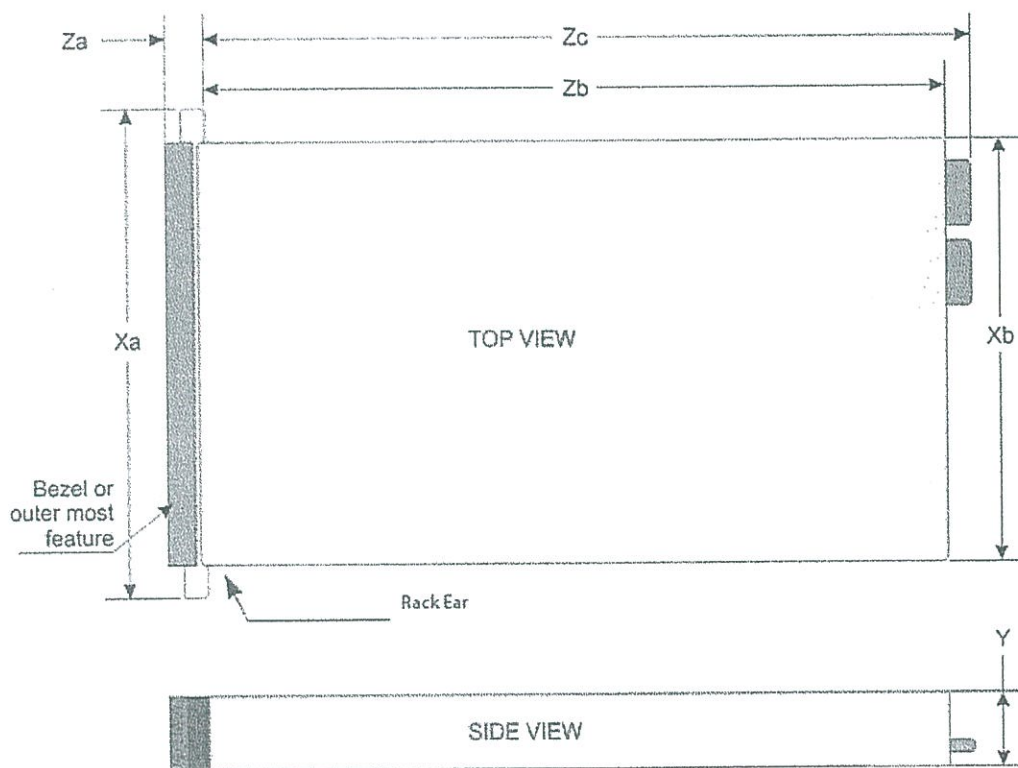
Chassis dimensions

Figure 27. Chassis Dimensions for R740 and R740xd

Table 24. Chassis dimensions (cm)

Chassis dimensions (cm)						
Xa	Xb	Y	Za bezel	Za without bezel	Zb	Zc
482.0 mm	434.0 mm	86.8 mm	35.84mm	22.0 mm	678.8 mm	715.5 mm

Table 25. Chassis weight

Configuration	Maximum Weight
2.5" HDD for R740	26.3Kg
3.5" HDD for R740	28.6Kg
2.5" HDD for R740xd	28.1Kg
3.5" HDD for R740xd	33.1Kg

INSTANT SERVICES CO.,LTD
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

Environmental specifications

See Dell EMC PowerEdge R740 and R740xd installation service manuals on Dell.com/Support/Manuals for detailed environmental specifications.

Video specifications

The PowerEdge R740 system supports integrated Matrox G200eW3 graphics controller with 16 MB of video frame buffer.

Table 26. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

NOTE: 1920 x 1080 and 1920 x 1200 resolutions are only supported in reduced blanking mode.

USB peripherals

USB peripherals are supported through the front and back USB ports on the R740 and R740xd. The front USB ports are USB 2.0 compliant, only the back ports are USB 3.0 compliant. The R740 offers an upsell option to add an additional USB 3.0 port to the front of the chassis but this option is not available in R740xd.

INSTANT SERVICES CO.,LTD.
บริษัท อินสแตนท์ เซอร์วิสเซส จำกัด

DELL EMC

75

12

Appendix B. Standards compliance

Table 27. Industry standard documents

Standard	URL for information and specifications
ACPI Advance Configuration and Power Interface Specification, v2.0c	acpi.info
Ethernet IEEE 802.3-2005	standards.ieee.org/getieee802/802.3.html
HDG Hardware Design Guide Version 3.0 for Microsoft Windows Server	microsoft.com/whdc/system/platform/pcdesign/desguide/serverdg.mspx
IPMI Intelligent Platform Management Interface, v2.0	intel.com/design/servers/ipmi
DDR4 Memory DDR4 SDRAM Specification	jedec.org/standards-documents/docs/jesd79-4.pdf
PCI Express PCI Express Base Specification Rev. 2.0 and 3.0	pcisig.com/specifications/pciexpress
PMBus Power System Management Protocol Specification, v1.2	pmbus.info/specs.html
SAS Serial Attached SCSI, v1.1	t10.org
SATA Serial ATA Rev. 2.6; SATA II, SATA 1.0a Extensions, Rev. 1.2	sata-io.org
SMBIOS System Management BIOS Reference Specification, v2.7	dmtf.org/standards/smbios
TPM Trusted Platform Module Specification, v1.2 and v2.0	trustedcomputinggroup.org
UEFI Unified Extensible Firmware Interface Specification, v2.1	uefi.org/specifications
USB Universal Serial Bus Specification, Rev. 2.0	usb.org/developers/docs